

We claim:

1. A method for reliable multicast transport of data packets, comprising:

transmitting a data packet from at least one sending device to at least one receiving device;

determining at said receiving device missing or mangled data transmitted from said sending device;

sending an acknowledgement or transmission of missing or mangled data from said receiving device to said sending device or to another receiving device;

receiving a retransmission of said missing or mangled data from said sending device or said other receiving device to complete the data packet and a data transmission session.

2. The method of claim 1, wherein said acknowledgment of said missing or mangled data is a multicast or unicast negative acknowledgement message.

3. The method of claim 1, wherein said retransmission of missing or mangled data is a multicast or unicast message.

4. The method of claim 1, wherein said missing or mangled data is retransmitted from said sending device or said other receiving device that possesses the missing or mangled data from the data transmission.

5. The method of claim 1, further comprising prioritizing the retransmitting of said missing or mangled data based on said acknowledgement, number of data transmissions missed, location of missed or mangled data or the like.

6. The method of claim 1, further comprising retransmitting said missing or mangled data by retransmitting the original data transmission.
7. The method of claim 1, further comprising retransmitting said missing or mangled data by retransmitting only the missing data of the original data transmission.
8. The method of claim 6, further comprising repositioning said missing or mangled data in the data transmission.
9. The method of claims 1, wherein said retransmission is sent on different channels and at different data rates.
10. The method of claim 1, further comprising sending the original data transmission from said receiving device using an active ALC mechanism.
11. The method of claim 1, further comprising transmitting said acknowledgement or missing or mangled data from said receiving device using a NACK and retransmission mechanism.
12. The method of claim 1, where said missing or mangled data is from a previous transmission, an earlier transmission or a predicted transmission.
13. The method of claim 1, further comprising defining unidirectional transmission block identifiers and corresponding objects before transmitting data to a receiving device.

14. The method of claim 1, wherein said data is transmitted from the sending device using unidirectional protocol.
15. The method of claim 13, wherein said acknowledgement is transmitted by a receiving device using a bi-directional or uplink simplex protocol using the same transmission block identifier as the unidirectional protocol.
16. The method of claim 1, further comprising sending an acknowledgment from said receiving or sending device that the missing or mangled data has been correctly received.
17. The method of claim 1, wherein said acknowledgement contains a plurality of negative acknowledgements regarding missing or mangled data in the data transmission.
18. The method of claim 1, wherein said receiving device is a personal communication device, GPRS, WLAN, DVB of other similar wireless device.
19. The method of claim 1, wherein said sending device is a server, IP-based device, GPRS, DVB other similar wireless device.
20. The method of claim 1, wherein said sending device and said receiving device are in the same network or in different networks.
21. A computer program product for reliable multicast transport of data packets, comprising:
  - a computer readable medium for storing computer program code;

program code for transmitting a data packet from at least one sending device to at least one receiving device;

program code for determining missing or mangled data transmitted from said sending device;

program code for sending an acknowledgement or transmission of missing or mangled data to said sending device or to another receiving device;

program code for receiving a retransmission of said missing or mangled data from said sending device or said other receiving device to complete transmission of data packet and a data transmission session.

22. The computer program product of claim 21, wherein said acknowledgment of said missing or mangled data is a multicast or unicast negative acknowledgement message.

23. The computer program product of claim 21, wherein said retransmission of missing or mangled data is a multicast or unicast message.

24. The computer program product of claim 21, wherein said missing or mangled data is retransmitted from said sending device or said other receiving device that possesses the missing or mangled blocks.

25. The computer program product of claim 21, further comprising program code for prioritizing the retransmitting of said missing or mangled data based on said acknowledgement received, number of data transmissions missed, location of the missed or mangled data or the like.

26. The computer program product of claim 21, further comprising program code for retransmitting said missing or mangled data by retransmitting the entire original data transmission.

27. The computer program product of 21, further comprising program code for retransmitting said missing or mangled data by retransmitting only the missing data of the original data transmission.

28. The computer program product of claim 25, further comprising program code for repositioning said missing or mangled data in the data retransmission.

29. The computer program product of claims 21, wherein said retransmission is sent on different channels and at different data rates.

30. The computer program product of claim 21, further comprising program code for sending the original data transmission from said sending device using an active ALC mechanism.

31. The computer program product of claim 21, further comprising program code for transmitting said acknowledgement or missing or mangled data from said receiver using a NACK and retransmission mechanism.

32. The computer program product of claim 21, where said missing or mangled data is from a previous transmission, an earlier transmission or a predicted transmission.

33. The computer program product of claim 21, further comprising program code for defining unidirectional transmission block identifiers and corresponding objects before transmitting data to the receiving device.
34. The computer program product of claim 21, wherein said data is transmitted from the sending device using a unidirectional protocol.
35. The computer program product of claim 32, wherein said acknowledgement is transmitted from said receiving device using a bi-directional or uplink simplex protocol using the same transmission block identifier as the unidirectional protocol.
36. The computer program product of claim 21, further comprising program code for sending a positive acknowledgement from said receiving or sending device that the missing or mangled data has been received correctly.
37. The computer program product of claim 21, further comprising program code for sending a plurality of negative acknowledgements in the same negative acknowledgement message.
38. The computer program product of claim 21, wherein said receiving device is GPRS, WLAN, DVB or other similar wireless device.
39. The computer program product of claim 21, wherein said sending device is a server, IP-based device, GPRS, DVB or other similar wireless device.
40. A system for reliable multicast transport of data packets, comprising:

at least one sending device for transmitting data to at least one receiving device;  
at least one receiving device for determining missing or mangled data transmitted from said sending device and sending an acknowledgement or transmission of missing or mangled data to said sending device or to another receiving regarding retransmission of at least missing or mangled data;  
at least one network for establishing communication between said sending device and said receiving device as well as communication between receiving devices in the network.

41. The system of claim 40, wherein said acknowledgment of said missing or mangled data is a multicast or unicast negative acknowledgement message.

42. The system of claim 40, wherein said retransmission of missing or mangled data is a multicast or unicast message.

43. The system of claim 40, wherein said missing or mangled data are retransmitted from said sending device or another receiving device that possesses the missing or mangled data.

44. The system of claim 40, wherein the retransmission of said missing or mangled data prioritized based on the acknowledgement of missing or mangled data received, number of data transmissions missed, location of missed or mangled data or the like.

45. The system of claim 40, wherein missing or mangled data are retransmitting along with the entire original data transmission.

46. The system of claim 40, wherein retransmitting said missing or mangled data involves retransmitting only the missing data of the original data transmission.
47. The system of claim 40, wherein said retransmitting involves repositioning said missing or mangled data in the data retransmission.
48. The system of claims 40, wherein said retransmission is sent on a different channels and at different data rates.
49. The system of claim 40, wherein said data transmitted from said sending device using an active ALC mechanism.
50. The system of claim 40, further comprising transmitting said acknowledgement from said receiving device using a NACK and retransmission mechanism.
51. The system of claim 40, where said missing or mangled data is from a previous transmission, an earlier transmission or a predicted transmission from said sending device.
52. The system of claim 40, wherein sending device defines unidirectional transmission block identifiers and corresponding objects before transmitting data to the receiving device.
53. The system of claim 40, wherein said sending device transmits data using a unidirectional protocol.



54. The system of claim 52, wherein said receiving device transmit an acknowledgement using a bi-directional or uplink simplex protocol using the same transmission block identifier as the unidirectional protocol.

55. The system of claim 40, wherein said sending device and receiving device are in the same network of different networks.

56. The system of claim 40, wherein said receiving device is personal communication device, GPRS, WLAN, DVB of other similar wireless device.

57. The system of clam 40, wherein said sending device is a server, IP-based device, DVB, GPRS or other similar wireless device.

58. An apparatus for reliable multicast transport of data packets, comprising:  
at least one processor for determining missing or mangled data in a data transmissison sent by a sending device.

a NACK and transmission mechanism for sending an acknowledgement or transmission of missing and mangled data to said sending device or to another receiving device; and

a memory for storing the data transmission from the sending device or other receiving device.

59. The apparatus of claim 58, wherein said acknowledgment of said missing or mangled data is a multicast or unicast negative acknowledgement message.

60. The apparatus of claim 58, wherein said retransmission of missing or mangled data is a multicast or unicast message.

61. The apparatus of claim 58, wherein said missing or mangled data is retransmitted from said sending device or other receiving device that possesses the missing or mangled blocks.

62. The apparatus of claim 58, further comprising sending the original data transmission from said server using an active ALC mechanism.

63. The apparatus of claim 58, where said missing or mangled data is from a previous transmission, an earlier transmission or a predicted transmission.

64. The apparatus of claim 58, wherein said receiving device is personal communication device, GPRS, WLAN, DVB of other similar wireless device.